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CONSCIOUSNESS IN PSYCHOLOGY AND PHILOSOPHY[1]

THE great problem of ancient philosophy was the relation of the universal to the particular. The Greeks and Romans had no problem of consciousness, because both the universal and the particular were for them essential aspects of existence. They had conceptions very much like our notions of consciousness, but they had no term which is an exact equivalent to ours. The words *συναισθάνομαι*, *συναίσθησις*, and *συνειδησις* probably came nearer to meaning the same as our word consciousness than any other words in the Greek language. The only Latin word which approaches consciousness in meaning is *conscientia*, which usually means about the same as our word conscience, although it is occasionally used to mean self-knowledge in general. Later came Christianity with its emphasis on the soul and heart, with their motives, sins, and destiny.

Descartes not only distinguished a substance whose essence is thinking from a substance whose essence is extension, and conceived minds as individual things related to each other and to non-mental things; he also for the first time in modern philosophy emphasized the idea that consciousness is essentially the perception of what goes on in one's own mind. This notion that consciousness is essentially self-consciousness is one of the two commonest current meanings of the term, the other being the various processes that enter into and constitute the mental life. Descartes's controversy with Gassendi developed the doctrine of the subjectivity of the sensory attributes of things, and the distinction between primary and secondary attributes was introduced into philosophy.

The ancients were aware of the importance of the fact that many minds may know the same object; they frequently refer to it; and when in modern times the word con-scious-ness was invented, this was its earliest signification—the knowing of things together by many minds. Professor Baldwin's name for the same thing in his recent book is "syndoxic meaning"—the word translated into Greek.

[1] Read before the joint session of the American Psychological Association and the Western Philosophical Association, Minneapolis, December 29, 1910.

This idea was generalized into the knowledge of knowledge, and consciousness came to be the individual's perception of what passes in his own mind. This is the primary meaning of the term in Locke's "Essay," 1690. In 1715 Samuel Clarke wrote, "Consciousness . . . signifies . . . the reflex act by which I know that I think and that my thoughts and acts are my own and not another's." Late in the nineteenth century, Sir William Hamilton wrote that consciousness is purely intuitive, "the recognition by the thinking subject of its own acts and affections."[2] In his "Discussions of Philosophy and Literature" (the New York edition), page 570, we read, "Whatever comes into consciousness is thought by us either as belonging to the mental self exclusively (subjectivo-subjective), or as belonging to the not-self exclusively (objectivo-objective), or as belonging partly to both (subjectivo-objective)." Certain curious riddles follow from this doctrine, but we shall not stop to dwell on them here. Hamilton took consciousness about as seriously as anybody could.

The usage of the early English psychologists shows, however, another tendency. Locke all but identifies consciousness with the thoughts and emotions of which one is conscious. Thus, "It is altogether as intelligible to say a body is extended without parts, as that anything thinks without being conscious of it or perceiving that it does so." One might as well say that a man is always hungry but does not always feel it, as that he thinks but does not always perceive it.[3] "Thinking consists in being conscious that one thinks." Thus all states of consciousness are essentially states of self-consciousness.

In its empirical aspect, mind is the same thing as consciousness—it is the place where mental processes go on. Of course mind has another aspect. It is that phase of reality which is more and other than mere matter in motion (G. F. S. and J. M. B.).[4] It differs from the thinking substance of Descartes in that its content is processes and functions, and also in that it is organically related to the habits and the general physiology of the individual. But, as in the "First Alcibiades" of Plato, the "Nicomachean Ethics," Cicero's "Somnium Scipionis" (§ 8), and Descartes's second meditation, the mind is the man, properly speaking. It is an individual thing sustaining relations to other things and comprehending a various content. Baldwin and Stout do not speak of it as *substans,* but if the word still retained its original meaning of that which subtends or underlies, it might be applied to their conception of mind without incongruity. Consciousness is thus the place of ideas, sensory qualities, images, emotions, choices, and so on; it is the workshop of mind.

[2] Hamilton's "Lectures on Metaphysics," Boston, p. 111.
[3] "Essay," Bk. II., Ch. I., Sec. 19.
[4] See Baldwin's Dictionary.

It is conscious of itself in all that it does, and is very active in the production of contents, relations, resolutions, and other psychological things. It might be compared to the workshop of the great patron saint of the Yuletide, if only we could think of Saint Nick as identical with his own toy-factory. Sometimes the mind is passive. Emotions sweep over it, it is bathed in the mists of moods, stimuli rain in upon it, and associations shoot across it. But it is saturated with purpose and usually it is busy building and maintaining a world.

This individual and wonderful affair is the "mind" of much modern idealism and modern psychology. It gives rise to some of the fundamental problems of modern philosophy and psychology, such as the relation of the mind to the body, the relation of ideas to their objects, the elements of which ideas are composed and the laws of their compounding and growth, the problem of finding some bridge of identity between this inner world of consciousness and the outer world of reality. Some recent psychologies discuss the question whether sensations are the same as or different from the empirical properties of things. Some still hold a doctrine differing only in the terms in which it is expressed from Berkeley's *esse est percipi*. The opposition of this consciousness to the objective world is still regarded by many, as it was by Hamilton, as "the primary and most important analysis and antithesis of philosophy."[5]

The romantic movement in the nineteenth century had much to do with emphasizing the independence and autonomy of this inner life of man, but it found the instruments of its emphasis already forged by modern philosophy and psychology. Since Kant and other philosophical romanticists, the most general of the problems of epistemology has been, How is knowledge possible? So close were the curtains of the great stage of the world drawn across the vision of the mind, that the most important question philosophy could ask was, How does the mind acquire its knowledge of what transpires on the stage? God and the absolute have been defined as the indifference of subject and object and as the unity of subject and object. We have heard that as this unity of subject and object does not itself stand in the relation of object to the subject, it can never be known as it is. The mystics say it can only be felt. We hear, too, that the object is only the external meaning of the mind's ideas, and a partial fulfilment of its purpose. We have feared that the complete fulfilment of its purpose might prove its Nirvana and extinction. Berkeley said that the divine mind is the external world of man's mind, but we never see God. We only see our own ideas, the laws of nature being the axioms according to which God puts ideas into

[5] "Lectures on Metaphysics," p. 111.

our minds. The realists, from Thomas Reid to the programists, have done what they could to give dignity to this type of doctrine by protesting that what we know is real and not a mere idea. The recent concerted asseveration concerning the externality of relations is the latest edition of that dogmatic protest.

But, you say, the functional psychology! Surely the functional psychology has not been guilty of this mythology. Well, the functional psychology builds largely on biology and is the newest hopeful word on the subject of mind. But the functional psychology has not always applied its convictions ruthlessly, or one of the best known of functional psychologists in America would not be reasserting the Lockean conception of mind in his latest book, and the psychophysicists would not be wasting time over the relation of body to mind as parallelism, interactionism, or automatism. Moreover, functional psychology has not yet defined mental function in terms which are applicable to all the phenomena with which psychology deals. Largely because of its conception of mental function as a reflex act, the psychologist begins with a chapter on brain anatomy and physiology and then opens a new chapter when he wishes to speak of mind or consciousness. Owing to the reflex act conception of mental function in combination with the traditional conception of consciousness, his treatment of his subject lacks continuity and system. He discusses isolated topics, and he does it in such a way that the student who happens to look up from his page to behold the living presence of a man often wonders whether there can be any connection between the two. The psychologist's mind turns out to be either a nervous system or else an individual and independent thing, dwelling in the body and sustaining relations of contrast and exclusion toward all other things.

Many students of philosophy and psychology to-day are looking for a substitute for this traditional Cartesian conception of mind. Professor Woodbridge finds its chief defect in the idea that consciousness is always a subject in relation to an object. Now it happens that every object of thought is either a term or a relation between terms, and if consciousness is not to be regarded as a term related to other terms called its objects, it must be a relation. Hence, as every one knows, Professor Woodbridge holds that consciousness is simply an order of relations like time and space. It is like time and space in being an order of relations, but unlike them in the type of relation which it denotes. Consciousness is an order of relations of implication and suggestion. Professor Woodbridge has not, so far as I know, compromised his conception by insisting that this order of relations is objective rather than subjective, thereby reasserting the very dualism which his conception would avoid. His

realism is consequently no mere dogmatic protest against subjectivism. Indeed, his assertion that consciousness is an order of relations analogous to time and space is, in interest and importance, the first creditable attempt of any recent realist to construct a positive theory of knowledge which is more than a protest. Here is something which had not been said before, a doctrine which might well serve as the program of further constructive work.

Meanwhile, certain factors of experience point to legitimate uses of the terms conscious and consciousness. The erroneous, the illusory, the fanciful, the problematic, in short, all immediate values, stand out as unique aspects of things, and psychology might be defined as the science of such values. Everything that enters into the life of a young child is immediate, every knowing process has an immediate aspect, all the things we love, hate, or desire are of course immediate, the absolute in the sense of the unique, complete, and perfect is immediate, and so also are the useful, the beautiful, and the good. I do not mean that these things are merely immediate. Far from it. But everything which can be thought or felt or known or chosen has an immediate value, and some science should specialize upon it. Immediate value is not a thing in a sphere by itself, like a gold-fish swimming in an aquarium. It is in no sense an individual thing, it is always an aspect, a flavor, an atmosphere. Like light, it is nothing that the eye can see. It makes seeing possible, in a sense it is seeing; but what we see is always things upon which the light shines. We do not experience immediate values. On the contrary, immediate value is, or rather becomes, the experience of things. It is possessed by everything which serves as occasion for the exercise of powers and capacities of action.

How things are associated and immediate values become suggested values, how assimilation and complication transform and organize them, how reflective power develops, how an instinctive animal becomes a moral and political person, how science and religion appear—these remain as a few of the most important problems of psychology. But the language in which they are treated need no longer prejudice the mind of the student with a crude metaphysic which it will take him years to outlive. Consciousness will no longer be a wonderful universe *in parvo*, an individual thing in a world of things. It will have the significance of any abstract noun such as roundness or justness. Consciousness will be simply the continuum of immediate value. The unit of immediate value may still be sensation. But the total unity in manifoldness which comprehends all values will no longer be a mind in a body, but a person, and the self will be treated as the highest discovery of reflection.

It was certainly a mistake to confuse self-consciousness with the

reflective consciousness of self by assuming that all psychical processes are accompanied by self-perception like a running commentary to a text. Self-*consciousness* is a synthesis of immediate values due to the operation of certain instinctive motor tendencies, while the consciousness of *self* is a highly reflective synthesis of values which are largely implied and therefore mediated. The idea that the consciousness of self is a sort of continuous intuition of something called the mind or the soul is one of the most uncritical vagaries of traditional psychology. What we are conscious of in this immediate and intuitive way is always some memory, or some muscular contraction or organic condition, not the self in any true sense of the term. At times we do definitely and objectively *think* of our selves, but this is reflection, not intuition, and it is not continuous. For my own part, it is simply a case of malobservation to say that it is as easy to think of an extended thing without parts as to think of anything as thinking without being conscious that it does so. My own observation is just the opposite. When I think about myself I am not thinking about other things, and when I think about other things I am not thinking about myself.

Every one who has had the misfortune to teach psychology, ethics, and the philosophy of religions as well must have felt the lack of a psychology which develops without serious break or chasm into the other disciplines. As treated by psychology, consciousness is an individual affair, whereas a man is an absolute individual neither in his thinking, his emotions, nor his will. The psychology of consciousness recognizes the dependence of the individual upon his physical environment for stimuli; it does not sufficiently recognize man's dependence upon his social environment for his actual thoughts and emotions. It emphasizes stimulation as fundamental, it often says nothing about suggestion. Indeed, the whole matter of suggestion and social influence is treated as unscientific by a very large part of the psychological fraternity. They leave all these matters to such works as Boris Sidis's "Psychology of Suggestion," Le Bon's "Psychology of Peoples and Psychology of Crowds," "Les Lois de l'Imitation," and other books written chiefly by sociologists. Consequently the foundations of logic, ethics, and the philosophy of religions are not furnished by empirical psychology. Aside from James's brilliant chapter on the consciousness of self and Baldwin's discussions of the self in his "Social and Ethical Interpretations," contemporary psychology offers the merest scraps and fragments of such a basis, and even these chapters stand out as logically unrelated to other chapters of their authors' psychologies.

The teacher of ethics must either try to invent a psychological foundation for his subject, gathering what materials he can from the

sociologists and the writers on imitation and suggestion, or else leave his teachings without scientific foundation. The former procedure is unconvincing to the student, and the latter leaves him without a guide out of the wilderness of ethical methods to which he is introduced. It is all very well to write psychology for the sake of psychology, and to work steadily under the lead of facts. We all believe in scientific method, but contemporary psychology is far less scientific than she should be. She has permitted the reflex arc concept and methods of investigation based upon it to blind her to the actual laws of experience. She has permitted a traditional, almost mythical notion of consciousness, devised originally in full view of the doctrine of a future life, to stand between her and the men and women of this world. We need a psychology of human conduct to supplant the psychology of consciousness.[6]

I have had dreams of such a psychology. It begins with an account of the law of mental growth, the combined law of selection and repetition among modes of action. It proceeds to a description of all the capacities of action with which a child comes into the world, with some definition of the difference between a human babe and the lower animals, and some hint as to the child's capabilities of growth. It should contain an account of the child's environment, the *milieu* in which he must grow up. It should devote a chapter or two to the immediate values which are the child's life, and proceed to the laws of association and suggestion. It should trace the growth of that distinctly human thing, the consciousness of self and the reflective aspect of the world which comes with it. And there should be chapters on perception, imagination, reasoning, emotion, volition. Last of all should stand the psychology of truth, utility, esthetic value, and that sense of individual completeness and perfection which plays so large a part in all forms of religion. In this psychology consciousness is the principle of continuity, sensation the unit of discrete value, and the self the totality within which all its studies fall.

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[6] It is refreshing to see such a psychology outlined in the opening paragraphs of the supplement to the last edition of "Men of Science."

SOCIETIES

THE NINETEENTH ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE American Psychological Association met at Minneapolis, December 28–30, 1910, for the nineteenth annual meeting amid fortunate external conditions as regards both weather and place of meeting. Although there were the usual number of persons in attendance at the sessions, there was a notable absence of eastern psychologists, but five registering from east of the Alleghanies. On the other hand there were a number present from the far west. There were smokers at the University of Minnesota and the usual social functions. The sessions were held in close proximity to the psychological laboratory, which was open to inspection during the week.

The one subject which more than any other dominated the meeting was the use and meaning of the word consciousness. Of the thirty-three names which appeared on the program for the three days' sessions, one third were scheduled for papers or discussions on this topic. The president's address was upon "The Place of Movement in Consciousness," and extemporaneous discussion was freer upon this subject than upon any other. The best place on the program, the morning of the second day, was devoted to a joint session with the Western Philosophical Association, the subject of the conference being "Philosophical and Psychological Usages of the Terms Mind, Consciousness, and Soul." The term soul was quickly disposed of as signifying an entitative something with which neither psychologists nor philosophers, as such, had anything to do. The term mind, in so far as it bore a similar reference to the cognitive experience, suffered a like treatment. The heat of discussion centered about the use of the term consciousness, but the speakers were, for the most part, merely descriptive or critical, and only indirectly constructive. Mr. Bode opened the discussion for the philosophers with a critique of the definitions of consciousness that have been offered by current realism, particularly of those definitions which identify consciousness with awareness or apprehension, with context or setting, and with the function of representation or meaning. The first of these fails because it must recognize two kinds of objects, namely, those which exist only when there is awareness—*e. g.*, pleasures and pains—and those which may exist apart from awareness. Hence, it is obliged to postulate two different types of response on the part of the perceiving organism, the one being a condition of awareness and the other a condition both of awareness and of those

qualities or objects which exist only when there is awareness. This implication of the position finds no support in the present-day psychology of perception. The actual test between the kinds of objects is not this hypothetical difference in our responses, but in context or relationship. In applying this test, however, the realist confuses the distinction between fact and meaning or validity with the distinction between valid fact and validating experience. The same confusion occurs in the form of realism which discards awareness and finds in context or relationship the source of the differentiation between consciousness and object. It therefore has no advantage over the other theory. The assertion that consciousness is the function of meaning assumes a hard and fast distinction between sense quality and meaning which does not exist in fact. The view of instrumentalism is that consciousness is a name for the entities created by the psychologist in the furtherance of his particular purpose. It is not a distinct entity or function or relationship.

Mr. Tawney, the other speaker from the Philosophical Association, called attention to the objectivity of the ancients, and showed how, through the influence of Christianity and the Cartesian philosophy, the modern problem of consciousness arose. He sought to show how from the Cartesian point of view there came to be the doctrine of the subjectivity of the sense properties of things and the distinction between primary and secondary qualities, the independence and autonomy of the "inner life" or "inner world," and how this conception has precipitated the whole modern problem of the relation of the body and mind. Even the functional psychology is only an attempt to adjust this traditional conception of consciousness to the laws of biology and physiology. It is still the psychology of the inner life, a psychology of subjectivity, and as such it fails to lay scientific foundations for logic, ethics, the philosophy of religion, and sociology, which necessarily deal with human experience and human character. A return to the objectivity of the ancients would be a great gain. Woodbridge's definition of consciousness as an order of relation came in for a bit of commendation, and the speaker laid emphasis upon the phenomenon of immediate value as the distinctive mark of the kind of behavior with which psychology chiefly deals.

Mr. Angell spoke first for the psychologists, reviewing the steps by which the terms soul and mind had disappeared from current psychological discussion, and indicating certain evidences to show that the term consciousness was about to suffer a like fate. Genetic psychology, it was pointed out, could make no use of the term with its traditional connotation as signifying something open only to private introspection. In this field it was shown that the scientist could

make use of such terms only as indicated behavior. The speaker further contended that even in the study of human psychology attention was being given more and more to the objective facts connected with a mental state. Thus in the study of the memory psychologists attempt to find out the number of repetitions necessary to learn a list of nonsense syllables, the most economic periods of work and rest in the learning, the most economic method of dividing a selection to be learned, etc.—all objective facts. Facts of this sort, the speaker thought, point to an increasing interest in the study of behavior and a decreasing interest in the study of "consciousness," a tendency so strong as to presage the possible disappearance of the word consciousness from psychological literature.

Mr. Lindley was the other speaker for the psychologists. He called attention to the fact that the breaking up of an established order in science, as well as in government, usually came about by the uprising of neglected interests. The present dissatisfaction with the term consciousness he thought was a case in point. For a long time psychologists had insisted on using the term to mean a state of awareness, and had thus thrust out of the proper realm of psychology a large amount of material most intimately connected with states of awareness, and had invoked the phrase unconscious cerebration to take care of the neglected data. This was an unsatisfactory procedure; and after suffering this sort of treatment for a time, the neglected interests were demanding recognition, and such a revision of the term consciousness as to make it more inclusive, or the discarding of the term for some other more appropriate one. The speaker cited animal psychology, experimental psychology, and abnormal psychology, all of which were finding that the facts that they must consider could not be included under the traditional concept of consciousness.

The discussion of the foregoing papers was opened by Mr. Ewer, who insisted that there was an imperative need to fill the gap between the term consciousness as used by psychologists and the term as it was used by philosophers. He, however, did not attempt to offer a definition suited to the purpose.

Mr. Judd thought that, while it was the duty of empirical psychology to define consciousness, it was a matter of little importance to psychology what connotation was given to the term by philosophy. The speaker offered a definition based on a distinction between modes of behavior. Digestive behavior differs from locomotive behavior, and the latter from behavior based on ideas. These types of behavior tend to grow into systems, and that which characterizes the human system is that its system is a world of ideas. Now, there is need for some word to define this world of ideas. Experience might be used;

this would not be in danger of being fused with physical terms. But it might be easier to escape metaphysical difficulties by defining a new term.

Mr. McGilvary did not agree with Mr. Judd in the diverse interests of psychology and philosophy. Both sciences start with a present experiential group; this group behaves in some manner: it excludes and it includes. The behavior of this group constitutes the subject-matter both of psychology and of philosophy. He pointed out, as had Mr. Lindley before him, that we know less about the brain than we do about the behavior of the present group, to which the speaker chose to give the name consciousness. The philosopher has, like the psychologist, a real empirical problem.

Mr. Thorndike, who was scheduled to close the regular discussion, had presented his views somewhat at length on the previous day. At that time he had pointed out that psychologists were accustomed to make two sorts of statements about human nature: statements about consciousness, about the "inner life of thought and feeling," the "self as conscious," the "stream of thought"; and statements about behavior, "statements about the life of man that is left unexplained by physics, chemistry, anatomy, and physiology, and is regularly compassed for common sense under the terms intellect and character." The prevailing attitude in psychology has been to restrict its subject-matter to statements about consciousness. But this becomes meaningless when one approaches the study of animal psychology. It appears that in human psychology, as well, it is unnecessary and perhaps inadmissible to continue a pretense that there is an impassable gap, a real discontinuity, between any and all of the animal's movements and his states of consciousness. Scientific judgments about a man's toothache, about his state of anxiety, or about his judgment that three times seven are twenty-one, do not differ essentially from judgments about his stature or his temperature. The former differ in their greater dependence upon a man's verbal reports and the greater likelihood that one will have, in respect to them, certain sources of information denied to other men. But the difference is one of degree rather than one of kind. The facts of mental science need not be known to one observer only. The only kinds of facts with which science can concern itself are facts that are open to common observation. The pain of psychology must be the pain of medicine, the pain known to the physician and to the sufferer long after he had it or was it. By thus making the material of psychology objective, two noteworthy advantages are gained: first, the evidence about intellect and character offered by action and the influence of intellect and character upon action are given due attention; second, the connection of conscious states is studied as well as their composition.

In continuing the discussion after Mr. McGilvary, Mr. Thorndike pointed out that consciousness is always a feature of some particular living organism. Any definition of consciousness must take account of this, its most universal attribute. He insisted further, in opposition to Mr. Judd, that any serviceable definition of consciousness must be of such a nature as to include the behavior of the fish, the worm, and the month-old baby.

General comment upon the papers and discussion of the concept of consciousness was participated in by Messrs. Colvin, Jastrow, Huey, and others. Significantly enough there appeared no champion of the doctrine that a little while ago was used in certain quarters to define the subject-matter of psychology, namely, that psychology is the study of self-consciousness.

Consciousness was discussed from a somewhat different point of view in the president's address on "The Place of Movement in Consciousness." The modern motor theory ascribes to movement practically all of the important conscious qualities and functions. Movement is said to be the fundamental element in space and time and other forms of perception and in memory, it is the selecting agent in attention, and makes possible the complex functions of recognition, meaning, and related operations of reasoning. Examination of each of these claims in turn shows, Mr. Pillsbury thought, that they have little if any basis in fact. To assert that all qualities of consciousness are motor, means, in the last analysis, that all mental qualities are derived from kinesthetic sensations. Kinesthetic sensations are obviously too poor in quality to furnish content for all perceptions and memories. Direct observation, too, shows that other qualities are present and fully as prominent as these. The attempt to place the consciousness that accompanies movement in the motor cortex seems not to be justified by the facts. The men who hold this view bring no new evidence to controvert that which led to the abandonment of sensations of innervation, and Cushing's experiment affords convincing proof that the action of the motor cortex is known only through the nerve ends in the contracting muscles.

Close examination of the argument that preparedness for movement is the deciding factor in determining attention and other forms of selection, shows that decision is made not by the movement, but by the stimuli that induce the movement. If one stops the explanation with the condition of the motor tracts, all is left to chance; and if one asks why the motor tracts are active, the explanation is in terms of stimulus and the results of earlier experience, and is not motor. The motor explanation of recognition and meaning suffers from much the same defects. To argue that recognition comes automatically when the same movements are made as when the object was

first seen, is to assume that there are as many sorts of movement as there are recognizable objects, and that one may always recognize the movements when they appear. Neither of these assumptions is probable, to say nothing of being self-evident. Similarly, movements do not have meaning of themselves, and it is difficult to see how they can give to another conscious process that which they do not themselves possess. While the motor theory has gone too far, it has been of value in making the explanations of consciousness more concrete. All that it needs is the reminder that movements grow out of sensory and associatory processes, and that all are organized into a common system.

Educational psychology was given the right of way at a joint session with Section L (Education) of the American Association for the Advancement of Science. Mr. Baldwin presented the first paper, dealing with "Individual Differences in the Correlation of Physical Growth of Elementary and High-school Pupils." The paper gave a report of an investigation in the correlation of yearly and half-yearly increments of growth in height and weight of 350 boys and 435 girls from the University of Chicago elementary and high-schools, the Francis W. Parker school, and the Horace Mann school of Columbia University. The records include consecutive measurements of the same individuals for periods of from 3 to 11½ years, giving a total of 6,000 measurements. A median found for all the measurements in the two Chicago schools shows that the children in the three schools form "a practically homogeneous group." Individual measurements show that there are different correlations for growth in height and weight for both boys and girls who are above the median from the correlations for those who fall below the median height. Those above begin and end their various periods of acceleration and retardation, on the average, earlier than those below the median. For boys above the median the average maximum acceleration in absolute height occurs between thirteen and fourteen years of age, and for boys below the median it occurs between fourteen and fifteen years of age. For girls of the first class the acceleration is between 11½ and 12½ years, while for those of the second class it occurs between 12½ and 13½ years of age. The same general law seemed to hold for weight.

Individuals above or below the median height maintain their relative position throughout the period studied, but they show individual variations of slight amounts at different periods. These facts show how "one may prophesy the probable development of a boy or girl after once knowing his or her relative position in regard to the given median." However, the fluctuations in weight do not follow in detail the correlations in height, as in some cases of accelerated growth in height there was an actual loss in weight.

Mr. Freeman reported a series of experiments which had for their purpose the comparison of the scope of attention and number perception in adults and children. The objects used were spots of light one centimeter in diameter, presented tachistoscopically upon a large cotton screen, the source of light being hidden by the screen. For the scope of attention the objects were arranged at equal intervals in horizontal rows, as any other arrangement favored subjective grouping. For the perception of number the objects were grouped in various ways.

The results showed that with an increasing number of objects the percentage of correct judgments decreased more rapidly in children than in adults. This difference is not a difference in the scope of attention, for experiments showed that up to four objects the judgments of children averaged only 4.5 per cent. poorer than the judgments of adults. Since the average scope of attention for the adults proved to be between four and five, the difference in scope of attention was less than one. That the adults were able to judge more correctly when five or more objects were presented was due, it was thought, to "the tendency of the adults to subjectively group the objects presented to them." The results showed that in adults the attention was better distributed than in children. An important pedagogical conclusion from the experiments was that number work should be introduced by training in the recognition and manipulation of grouped objects.

Two papers, one on "Periods of Work in Learning" and one on "Transference of Practise," were presented by Mr. Starch. Both were reports of experimental work, the first dealing with the learning to associate certain numbers with letters. In this experiment the workers were divided into three groups. The first group worked ten minutes at a time twice a day, the second worked twenty minutes at a time once a day, and the third worked forty minutes at a time every other day. Each group worked six days. The records show that the ten-minute group improved more rapidly than the twenty-minute group, and that the latter improved more rapidly than the forty-minute group. The twenty-minute group transcribed on the average thirty-one more letters in every five minutes than the forty-minute group, and the ten-minute group transcribed on the average ten more letters than the twenty-minute group.

In Mr. Starch's second experiment, the object was to determine the effect of training in one fundamental arithmetical operation upon efficiency in other arithmetical operations. A group of persons were trained for fourteen days in mental multiplication. Before and after this training they were tested in other arithmetical processes, such as adding fractions, subtracting and dividing numbers. These

tests were also made upon another group of persons who did not have the fourteen days of training. The improvement of this latter group was deducted from the improvement of the first group. This left an improvement fifteen per cent. as large as the improvement during the fourteen days. This improvement seemed due to the ability acquired during the period of practise.

A paper on "The Genesis of Attention in the Educative Process" was read by Mr. Swift. He reviewed the doctrine that clearness is the essential nature of attention and that education is the "securing of the attention to ideas which make for growth." He showed how, in the process of securing the attention, the feelings are an unsafe guide, and again how the teacher can not rely upon rewards and punishments. He pointed out that the "growing point in elementary and secondary education is the special school for delinquents and the reformatory institutions," and that the inmates of these institutions had secured the very best schools of all by their rebellion against the regular school organization. The methods employed in such schools, it was pointed out, were strikingly similar in that the teachers made a special effort to appeal to the primitive instincts of the persons to be instructed. The success of these schools, the speaker thought, pointed out to the public school the necessity of utilizing the racial and social instincts as the basis of the appeal to the attention.

Quite in keeping with the spirit of the earlier papers was Mr. Seashore's paper on "The Consulting Psychologist," which closed the joint session. This person should be "an expert in psychology who may be employed as adviser in matters pertaining to the ascertained facts of mental life with reference to their bearing upon a given practical situation, or may be employed to search for or verify such facts by a special investigation." The field to be covered is one that lies beyond that of academic teaching and research and the common application of psychology in practise. The opportunities for the consulting psychologist fall roughly into four general fields: (1) mental pathology; (2) arts, crafts, professions, and industries; (3) education; (4) eugenics. Mr. Seashore illustrated the scope of these fields in some detail and gave concrete illustrations of actual work. He further pointed out the need of the thorough training of the consulting psychologist and what in detail this training should be. He must be a man endowed with scientific freedom, yet not a pure scientist. He must be neither an administrator, a teacher, a practising physician, nor a reformer. He must be a man who, choosing the field of the consulting psychologist as a profession, will devote himself to intensive work in his chosen field, rising through a series of apprenticeships to efficiency in his work.

Discussion of this paper took the turn of personal experiences of academic psychologists in the applications of psychological facts to practical situations. Mr. Seashore, in closing the discussion, pointed out again that he was not arguing for an extension of the field of the general psychologist, but for the creation of a new department of work.

The problems of the psychology of religious experience consumed the time of an entire session, the afternoon of the second day. Mr. Starbuck read a paper on "The Instinctive Bases of Religion." He pointed out what he held had been admitted by genetic psychologists generally, namely, that there is a "sense which guides animals on through to the highest in appreciating and stressing just those reactions which are for their well-being, and depreciating and rejecting those which mean maladjustment." There are two phases which have been passed over lightly by most students. The first is the direct and immediate evaluation, in terms of the result of the reaction, of its value to the organism. This the speaker proposed to call "the cosmoesthetic sense, meaning thereby a sense of order, of relation, of proportion." Without this cosmoesthetic sense, the trial-and-error method of learning could not be learning at all, but merely a mechanically stimulated reaction-type of response. This concept, so essential to the understanding of animal life, it was held, is also essential in understanding "the non-rational successes of religion and art in feeling their way into higher modes of reaction. Religion has wilfully cultivated the non-rational and cosmoesthetic attitudes toward life."

Religion is again like the life of animals in its forward-looking aspect. This was called "the teleoesthetic sense." It is only by "the assumption of such a sense that one can explain the forward-reaching phenomena in religion and in the life of animals, the anticipatory qualities of moral intuition, the non-rational character of the poetic passion, and the apparent success of religion in feeling after an adjustment to an ideal reality."

That there is no sufficient reason for postulating an innate religious sense was the ground taken by Mr. King in a paper on "The Question of an Ultimate Religious Element in Human Nature." Contrary to the views of many thinkers, both religious and scientific, who believe that there is an ultimate religious element in human nature which they variously call a "revelation," an "inner light," a "perception of the infinite," etc., Mr. King held that religion in the individual is "a construct in which instinctive factors play a part as they do in all else that pertains to human nature." The speaker attempted to account for religion as the result of the interplay of social influences.

Mr. Haynes presented a paper on the subject of "Case-taking in the Psychology of Religious Experience." By case-taking the speaker meant a procedure similar to that of the physician or the psychiatrist in diagnosing a case. The genetic method much in vogue, and valuable as giving the background for all study of religious experience, was objected to because it reveals only the geology of religious experience and not its chemistry. The biographical method was rejected because of its long-range results and consequent snapshot sort of data, and the questionnaire method was likewise rejected for careful diagnosis. Reliance, it was urged, could be put only upon careful laboratory methods which reveal the past experiences of the subject. This method uses as sources of information observation of the subject under questioning, tests, as in a clinic, the answers of the subject studied, and the testimony of friends and relatives, where obtainable. It includes information on the family history of the subject, his past religious history, and his present religious status. On the basis of this information it seeks to diagnose the individual's religious experience, to prescribe treatment whereby he may make the most of his religious capacities, and to watch the reaction under this treatment. One objection to the method is that the clinical picture is likely to be distorted by the bias of the case-taker. A second objection is that the facts relevant to the religious experience in question are not easy to note.

In a paper on "The Genesis of the Group Spirit," Mr. Ames sought to show that imitation does not suffice to explain how the group spirit comes to arise. Within a group there are many ego and alter relations, but these are not the only effective relations at hand. Each individual in the group is determined by the relation of the group as a whole to "ends and plans which lie beyond" the immediate situation. Thus the family has relations to every other family, "to neighborhood life, and to the plan and sphere of action characteristic of the family." "The consciousness of the family group arises, not through the imitation and opposition of its members, but through their cooperation in reaching certain ends. The sense of the group comes to consciousness with the effort to work out this cooperation. To be sure, the act is carried out through the process of stimulation and response, the response being, however, not always an imitation of the act, but more often a reaction for which the stimulation is merely the cue. The overt responses become in their turn the stimuli to other acts, which again do not necessarily imitate the act already performed, because all the acts are determined by their reference to the common end. In this interplay there arises a complex of associations and implications which is felt by the participants as something urgent and insistent, as something wholly objective.

Besides exercising a marked influence on the discussion of consciousness and the psychology of religion, animal psychology was represented on the program by two reports of experimental work. Mr. Cole reported a study on "The Relation of the Strength of Stimulus to the Rate of Learning in the Chick." Chicks were taught to discriminate the darker of two passageways in order to escape from a box. Three differences of brightness were used, one easy to discriminate, one of medium difficulty, and one of extreme difficulty. For these differences in brightness opal flash glass screens were illuminated by electric lamps placed at different distances from the screen. "For each condition of discrimination, groups of chicks of exactly the same age were trained under the influence of a weak, a medium, and a strong electric shock. When the discrimination was easy for the chick, the number of trials for perfect discrimination decreased with increase in the strength of the stimulus, *i. e.*, the stronger the stimulus the quicker the learning. For medium difficulty of discrimination this relation did not hold in the case of the stronger stimulus. It produced slower instead of more rapid learning." In this particular the results confirm those of Yerkes and Dodson for the mouse. Under difficult discrimination the chicks divided into two groups, those that learned the stronger stimulus more quickly, and those that failed to make the discrimination. The latter group included one half the number of chicks tried with the strong stimulus.

Mr. Shepard reported work with rats, cats, and ants in a labyrinth. Diagrams showing certain modifications of the labyrinth used by other experimenters were exhibited. These modifications consisted in arranging the labyrinth in such a manner that the entrance to a blind alley was not uniquely distinguishable from the entrance to the other blind alleys of the labyrinth, and in arranging the entrances to the blind alleys so that by changing certain doors the labyrinth could be transformed into a labyrinth of a different sort. The results of experimentation showed that the rats and cats learned the passageways by correcting errors near the food-box first. Of two alternate passageways of the same length, that with the least possibility of error was learned first. In other labyrinths of equal difficulty the same animals dropped the errors from both ends and learned the whole in a very short time. The ants learned labyrinths built on the plan of those used for cats even when the bottoms of the alleys were frequently changed during the learning. They learned less perfectly with light on both sides than with light on one side. Rotation of a section produced no effect. Changing the side of the light after learning controlled almost absolutely the movements of the ants. Relearning when the light was changed required three

times as long as the original learning. Definite associations were retained at least a week.

A total of nine experimental studies in normal human adult psychology were reported. A paper by Mr. Hollingworth (read by Mr. Bingham) reported an experimental analysis of the normal drowsiness hallucination recorded by two observers during the past two years. This experience was described as a "flashlight perceptual fusion or complication, and is further characterized by change of type of imagery, ideal substitution, fluid association on a sensory basis, and by isolation of association trains when they tend to develop. It is accompanied by tendencies toward vastness and grandeur, by rapidly ensuing amnesia, and by absence of symbolism."

Mr. Jastrow, in discussion, called attention to the corroboration of the paper by a forthcoming book by Havelock Ellis. He thought the study was a welcome antidote to the recent Freudian movement, but raised a question as to the absence of symbolism.

Miss Richardson reported an unusual case of color-blindness. A young man about twenty-four years of age, who at one time had passed the examination for brakeman on a railroad, found difficulty in getting certain colored after-images. Investigation with the Holmgren yarns, the Nagel cards, the spectral charts, and Hering color-discs showed a complete absence of sensitivity to yellow and blue, a weak sensitivity to any but very saturated greens of a low order of light intensity, and a normal sensitivity to reds. Inquiry into the family history showed that color-blindness was congenital.

An account of some recent experiments with the projection method was presented by Miss Martin. Five series of tests were made: to ascertain whether visual images are projectable at will, and if so whether, when so projected, they are amenable to examination, and whether anything is gained by having the images so projected; to learn whether the projection method can be used advantageously to study the difference between memory and imagination; to learn whether the method is applicable to the study of illusions, hallucinations, etc.; and to learn whether the projection method can be used to advantage in investigating auditory memory and imagination. The results showed that the projection method is strong in that it furnishes an objective standard for the comparison of visual images and thus makes questions regarding visual imagery concrete; it permits an examination of the image and the standard simultaneously under the same objective conditions; it makes it easier to keep the image at the same size and distance, and diminishes the likelihood of interference by other images. Extension of the experiment showed that the method was adequate to the study of the various processes to which it was applied.

Mr. Arps gave an introspective analysis of certain tactual phenomena. Judgments were made on the intensity of standard and comparative pressure stimuli applied to the upper phalanges of the index and middle fingers. The introspections center chiefly about the subjective variations of the standard stimulus. The results show that the comparative stimuli render constancy in intensity in a given norm impossible. This seems due to the assimilative effects which are most efficient within certain limits of a series, above and below which assimilative effects are minimal or entirely lacking. The fluctuations varied according to whether the normal stimulus preceded or followed the comparative stimulus, as to whether the comparative stimulus was given in the ascending or the descending series, and according to the duration of the norm and the comparative stimulus. As to the duration of the stimulus, the results seem to show that the normal stimulus has an effect on the comparative stimulus similar to that of the comparative on the normal in regard to intensity. The above results were obtained when the norm varied in duration but remained constant in intensity. When the standard stimulus remained constant both in intensity and duration, there was no noticeable assimilative effect. Duration, then, seems to be the determining factor in the production of assimilation.

A useful demonstration of tonal fusion was given by Mr. Bingham. He showed how a clang could be reconstructed by a method of synthesis. The reeds of a harmonium are tuned to the exact pitch of a series of forks that represent all the partials which have been found to be components of the clang. The forks are mounted on resonance boxes, and by means of a depression bar there is played on the harmonium a loud chord which includes among its notes all the pitches of the desired partial tones. The tuning-forks are set into sympathetic vibration. If the loudly sounding harmonium is now suddenly silenced, there is heard a simple clang, strikingly resembling in color the sound of the monochord. Indeed, the listener is at first apt to judge that the monochord has been actuated. The forks used in the demonstration were the Koenig series c′, g′, c″, e″, 7b flat″, c‴, d‴, e‴. These are the upper partials of the fundamental 128 v.d. Although no fork of 128 v.d. was among the series, the clang as heard seemed to have that pitch. The explanation is that since each of the forks makes with its next neighbor in the series a subjective difference of 128 v.d., the total effect is a difference tone sufficiently intense to predominate strongly over the objectively weaker higher tones, and to serve as a fundamental for the clang.

A case of colored gustation was reported by Miss Downey. Through reliance upon the color and tactual components of taste blend, a young man was enabled to pass accurate judgments upon

taste qualities. His thresholds for the presence and the recognition of sweet, sour, bitter, and salt were found to be average. Extensive stimulation and the presence of an odor increased the vividness and the persistency of the taste colors. They did not appear in minute stimulation. These taste colors were definitely localized in the mouth, were of a hallucinatory vividness, and possessed a uniform color tone and persistence under stimulation. The presence of objective colors introduced noticeable conflicts with taste colors; they tended to conflict with each other, to modify each other, and to fuse at times. The interpretation offered was that the synesthesia was an actual part of the perceptual fusion and in the present case easily accounted for by the color stimulation present in taste experiences.

Abnormal psychology, mentioned frequently in the course of the general discussions, came in for one paper. Mr. Huey called attention to certain matters of classification and terminology which had been settled tentatively by the American Association for the Study of the Feeble-minded at its Lincoln meeting, May, 1910. This classification follows:

1. The term feeble-minded is to be "used generically to include all degrees of mental defect due to arrested or imperfect mental development as result of which the person so affected is incapable of competing on equal terms with his normal fellows or managing himself or his affairs with ordinary prudence."

2. The feeble-minded are divided into three classes, viz.:

Idiots.—"Those so defective that the natural development never exceeds that of a normal child of about two years."

Imbeciles.—Development higher than that of an idiot, but not exceeding that of a normal child of about seven years.

Morons.—Higher than imbeciles, but not exceeding the mental development of a normal child of about twelve years.

Mr. Huey discussed this classification, pointing out that the Binet scale has proved itself most useful thus far in determining mental age, but other scales of norms are needed. Following Binet's suggestion, it may be well to apply these terms only when the mental retardation amounts to at least three years, or to at least two years when the child is not above nine. The term *retarded* may be used for the lesser degrees, permitting *backward* as its popular equivalent. Examination and classification in these terms, at the Illinois Institution, shows imbeciles to be the most numerous, morons next, and idiots least, though a mental age of one and a half to two years is the most frequent of all. Admissions above the mental age of ten are infrequent and hard to retain. Above twelve they are almost unknown, though this is the most populous and most troublesome zone

of defect. Special study of 32 of these border cases shows lines of transition from feeble-mindedness to "normal" dullness and instability, to neurasthenia, hysteria, insanity, epilepsy, and suggests these and other groupings of border cases. The characteristics of each group should be brought out by further clinical studies. New tests for local geographical orientation, for ability to classify objects, and for levels of play seem likely to be of service.

On recommendation by the council, amended by the association, the following resolutions were voted: (1) that the association extend a hearty welcome to the Seventh International Congress of Psychology for its meeting in 1913; (2) that in place of the regular meeting in December, 1912, the association meet in the spring of 1913 in conjunction with the International Congress; (3) that a committee, composed of Messrs. Cattell, Münsterberg, Sanford, Titchener, Watson, and Bingham, be appointed to cooperate with the officers of the congress.

Professor Carl Seashore was elected president and Professor W. V. D. Bingham was elected secretary for the ensuing year. Two places on the council were filled by the election of Professors Pierce and Warren. Through the secretary announcement was made of the proposed publication of *The Journal of Animal Behavior* and the *Animal Behavior Monograph Series*, both publications to begin with the first month of 1911.

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REVIEWS AND ABSTRACTS OF LITERATURE

Theology and Human Problems: a comparative study of absolute idealism and pragmatism as interpreters of religion. Eugene William Lyman. New York: Charles Scribner's Sons. 1910.

Professor Lyman has been known for some time to his colleagues as a successful teacher and the author of a number of thoughtful articles which have revealed a sound philosophical training and an agreeable literary style; but this book, which consists of the Nathaniel William Taylor lectures delivered before the Divinity School of Yale University in the year 1910, is his first introduction to a larger public.

It may be said at once that the impression which is produced is a favorable one. The author shows himself a theologian of independence, grasp, and virility, a welcome addition to the list of constructive thinkers in the field of the philosophy of religion.

In the first place, he is master of a clear and lucid style. No one is for a moment in doubt as to what he means, and he has, moreover, the faculty, possessed in supreme degree by the great leader of the pragmatists, whose untimely departure we all mourn, of vivid and happy illustration.

In the second place, he writes out of an adequate knowledge. Professor Lyman knows his philosophy and is able to use it without being burdened by the consciousness of his knowledge.

In the third place, he shows evidences of independent constructive power. A sense of proportion marks his workmanship, which gives pleasure to the man who is accustomed himself to deal with problems of construction.

The subject which he has chosen is "Theology and Human Problems," and the task which he has set himself is a comparative study of the two methods of approach to these problems which divide the attention of serious thinkers to-day. Four problems engage the author's attention: first, the problem of our knowledge of God; second, the problem of the nature of the religious experience; third, the problem of the interpretation of the world, as a whole, or, in other words, the question at issue between teleology and mechanism; and fourth, the problem of evil.

The methods of approach which Professor Lyman contrasts are those of absolute idealism and of pragmatism. By absolute idealism he understands the doctrine that "mind is the only reality, and every existing thing is part and parcel of some mind" (p. 10), with its corollary that the ultimate test of reality is "logical necessity" (p. 14). By pragmatism, on the other hand, he understands the doctrine that will is more fundamental than intellect in human nature, that knowledge is "essentially purposive" (p. 43), and that truth is to be tested by its final results. In the first chapter, indeed, he distinguishes Ritschlianism as a third type, but soon dismisses it as a half-way house to pragmatism. In this the reviewer believes that he is correct. Ritschl, following Kant, makes a sharp contrast between the theoretical and the practical reason. He believes in two kinds of knowledge, the theoretical knowledge of science and philosophy, which deals with causes, and the practical knowledge of ethics and religion, which deals with values. Thoroughgoing pragmatism, on the other hand, rejects this dualism. It bases all our certainties, intellectual as well as moral, upon practical demands, and judges theory in every realm by its serviceableness. Professor Lyman believes that in this attitude pragmatism is entirely right. Between its position and that of absolute idealism he sees no middle way. They are the two great highways to knowledge, between which we must choose, and he himself unhesitatingly chooses the former.

It is impossible within the limits of this brief review to follow the author's reasoning in detail. In general, it may be said to be a defense of the ethical as contrasted with the mystic interpretation of religion. A few sentences will serve to indicate the author's attitude toward one question which has been keenly debated in recent years, that, namely, between monism and pluralism. Professor Lyman refuses to be impaled on either horn of the dilemma. It would seem, he tells us, that ethical monotheism, his own position, "should neither seek the protectorate of a rigid monism nor allow itself to be stampeded by pluralism, but that it should stand forth as an independent metaphysical point of view. The definition of monism, as given by its chief sponsors, is too restricted, and that of pluralism is

too loose, to do justice to the facts of life when moral and religious experience is included, and we should insist on refusing allegiance to either of these terms till one or the other of them has been remolded and developed in accordance with the requirements of an ethical metaphysics" (p. 147).

To the philosopher who desires to keep in touch with the newer thought in theology this book of Professor Lyman's may be confidently commended.

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Introduction to Philosophy. WILHELM JERUSALEM. Authorized translation by Charles F. Sanders. New York: The Macmillan Company. 1910. Pp. x + 319.

This is a translation of the fourth edition of the German work. It is very unlikely that an introduction to philosophy has ever been, or ever will be written, which will satisfy more than a small minority of philosophy teachers. Jerusalem's book is, however, a real addition to the field. It has many merits, and perhaps no more defects than are bound to attach to any method of dealing with the subject that may be selected. The plan that is followed is in general to combine a brief historical and analytic survey with a constructive outline which sets forth the writer's own interpretation. There are naturally objections to be found to either of these procedures. Both are likely to be too sketchy to be altogether satisfying; and in the expression of his own opinions a writer is under temptation to let his private idiosyncrasies take space from the real task. But the first objection belongs, so far as I can see, to the ideal of an introductory book, rather than to any particular form that it takes; and Jerusalem's point of view is sufficiently synthetic and objective to avoid any very sharp condemnation on the second ground, and to enable most teachers to get without much trouble a point of attachment. It is to be expected that the German origin will present certain drawbacks. Most of the references to recent literature are naturally to Germans—though it may be noted that among other countries America fares particularly well; and in some instances, where the authors are not yet fully naturalized, the treatment is alike too extended and too general to be easily utilized. This, I suspect, is the case with the rather extended account of Avenarius, for example; and occasionally in other places the author assumes an acquaintance with recent German developments which the average American professor possibly ought to have, but in all likelihood does not possess. This, however, does not affect seriously the general value of the book. On the whole the treatment is lucid, straightforward, and reasonably exact; and it is rendered into clear and adequate English.

It is perhaps hardly fair to attempt much criticism of the doctrine of a book which is professedly an introduction. On the whole, I am inclined to think that the attempt to keep such a book entirely objective necessarily involves the lack of any real organization and unity in it; and until philosophers all agree of course a personal point of view will be unacceptable to its opponents. If the writer wishes to insert his own doc-

trines, and does this clearly and with due perspective, he has perhaps met all legitimate pedagogical demands; many teachers, indeed, will be glad to find things to criticize, up to a point, as an aid to class method.

It would not be difficult to find a good many things in detail with which to quarrel, especially in the metaphysical section; and there is a tendency, more noticeable in the sections that deal with some of the other disciplines, toward generalizations, sociological generalizations in particular, that lack something in sharpness of outline and logical rigor. But perhaps this is a necessity of the case, and on the whole the effect of the book is cumulative in leading up to a pretty definite philosophical outlook. Two quotations will perhaps sufficiently indicate the general animus. Philosophy is defined, to begin with, as the "intellectual effort which is undertaken with a view to combining the common experiences of life and the results of scientific investigation into a harmonious and consistent world theory; a world theory, moreover, which is adapted to satisfy the requirements of the understanding and the demands of the heart." Again, of method: "The formal demands which the present age imposes upon an effective philosophy are, that it should be empirical and strictly scientific in its nature and method, and that it return to sound common sense." "Briefly stated, the points of view secured for philosophy by means of this influence are the *genetic*, the *biological*, and the *social* methods of studying *psychical processes*." The book has some points of contact with American pragmatism, though the actual treatment of pragmatism in the text will scarcely be accepted as adequate.

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JOURNALS AND NEW BOOKS

MIND. October, 1910. *The Psychological Explanation of the Development of the Perception of External Reality* (pp. 457–469): H. W. B. Joseph. – An examination of Professor Stout's view that "the two factors involved in the perception of external reality are motor adaptation and the projection of the self." It is maintained that this view lacks "real coherence." *The Truth of Protagoras* (pp. 470–492): C. M. Gillespie. – Objection is made to Mr. Schiller's interpretation of the dictum of Protagoras, "Man is the measure of all things," as being the first statement of the fundamental principle of pragmatism, or humanism. "There is no justification whatever for the view that Protagoras taught that truth is a 'value' or any similar pragmatist doctrine." *Difference as Ultimate and Dimensional* (pp. 493–522): Archibald A. Bowman. – An examination of the negative logical judgment "S is not P." It is contended that "such an assertion is in its nature *sui generis*," that "behind the logical indifference to quality there is a vital distinction of kind between the affirmative and negative judgment," a distinction that is "unsolvable," and which, when taken into account, renders impossible the logical process of obversion. *The Apprehension of Feeling* (pp. 523–532): Helen

WODEHAUSE. – The contention is, in opposition to Dr. Stout, that the primary act in feeling "is simply to know-and-desire," and that "to know that we desire" is an act of subsequent reflection. *Discussions: Absolutism in Extremis?* (pp. 533–540): F. C. S. SHILLER. – It is pointed out that Mr. Bradley's article No. 74, in addition to a restatement of his views, contains important admissions "which threaten to end the long controversy about the logical character of absolute idealism." *Philosophic Pre-Copernicanism.—An Answer* (pp. 541–543): H. A. PRICHARD. – A reply to Mr. D. L. Munay's criticism of two chapters of his "Kant's Theory of Knowledge." *The Enumerative Universal Proposition and the First Figure of the Syllogism* (pp. 544–546): H. W. B. JOSEPH. – A brief objection to Mr. W. J. Robert's above-entitled paper appearing in the April number of *Mind*. *The Humanistic Theory of Value* (pp. 547–549): JOHN E. RUSSELL. – Indicating "how a pragmatist can successfully meet Mr. Quick's criticism of "the humanistic theory of value." *Critical Notes:* Emile Boutroux, *Science and Religion in Philosophy:* ARCHIBALD A. BOWMAN. Georges Lechalas, *Étude sur l'Espace et le Temps:* LEONARD J. RUSSELL. Leslie J. Walker, *Theories of Knowledge: Absolutism, Pragmatism, Realism:* F. C. S. SHILLER. E. B. Titchener, *Lectures on the Elementary Psychology of Feeling and Attention:* H. J. W. J. M. O'Sullivan, *Old Criticism and New Pragmatism:* R. A. P. ROGERS. Léon Robin, *La Théorie Platonicienne des Idées et des Nombres d'après Aristote. Étude Historique et Critique:* R. PETRIE. L. Levy-Bruhl, *Les Fonctions Mentales dans les Sociétés Inférieures:* R. R. MARETT. *New Books. Philosophical Periodicals. Notes.*

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NOTES AND NEWS

THE Government Printing Office at Washington has issued an abstract of the "Report on Changes in Bodily Form of Descendants of Immigrants," by Professor Franz Boas, of Columbia University. The questions on which evidence was collected were the following: "1. Is there a change in the type of development of the immigrant and his descendants, due to his transfer from his home surroundings to the congested parts of New York? 2. Is there a change in the type of the adult descendant of the immigrant born in this country as compared to the adult immigrant arriving on the shores of our continent?" The following is from the statement of the general results of the investigation: "In most of the European types that have been investigated the head form, which has always been considered one of the most stable and permanent characteristics of human races, undergoes far-reaching changes due to the transfer of the people from European to American soil. For instance, the east European Hebrew, who has a very round head, becomes more long-headed; the south Italian, who in Italy has an exceedingly long head, becomes more short-headed; so that in this country both approach a uniform type, as far as the roundness of the head is concerned. The head form may conveniently be expressed by a number indicating the transversal diameter (or width of the head) in per cents of the diameter measured from forehead to the back of the head (or the length of the head). When the head is elongated (that is, narrow when seen from the front, and long when seen in profile), this number will be low; when it is rounded (that is, wide when seen from the front, and short when seen in profile), this number will be high. The width of the head expressed in per cents of the length of the head is about 78 per cent. among Sicilians born in Sicily and about 83 per cent. among Hebrews born in eastern Europe. Among Sicilians born in America this number rises to more than 80 per cent., while among east European Hebrews born in America it sinks to 81 per cent. This fact is one of the most suggestive discovered in the investigation, because it shows that not even those characteristics of a race which have proved to be most permanent in their old home remain the same under the new surroundings; and we are compelled to conclude that when these features of the body change, the whole bodily and mental make-up of the immigrants may change. These results are so definite that, while heretofore we had the right to assume that human types are stable, all the evidence is now in favor of a great plasticity of human types, and permanence of types in new surroundings appears rather as the exception than as the rule. . . . In order to understand the causes which bring about these alterations of type, it is necessary to know how long a time must have elapsed since the immigration of the parents to bring about a noticeable change of type of the offspring. This investigation has been carried out mainly for the cephalic index, which during the period of growth of the individual undergoes only slight modifications. It appears in those cases that contain many individuals whose parents have been residents of America for a long time that the influence of American environment upon

the descendants of immigrants increases with the time that the immigrants have lived in this country before the birth of their children."

AT the meeting of the Aristotelian Society on February 6 Miss H. D. Oakeley read a paper on "Value and Reality." The theory that the world of values is objective in its source may be connected with natural realism. The qualities of the objects of perception which are objective for natural realism are the experiential foundation of our estimates of value. The "secondary qualities" have a degree of reality; the stage at which the recognition of value is aroused in consciousness is a higher degree. This view is founded on the exposition of natural realism in the late Professor Laurie's "Synthetica," though it does not follow that exposition into the absolute idealism in which it seems to culminate. A recognition of the reality of value seems also to be involved in the metaphysical meaning of Plato's ideal theory. The character of experience as not only significant, but also symbolic, is not adequately explained either psychologically as association, or epistemologically as expression of that which is universally valid. The reality of the world increases in proportion to its increase in value, and the valuable is a force with power over the existent. The ideas can not intelligibly be reduced to forms of a force originally without value. From the point of view here taken, the appearance of things as in space and time, if symbolic, must be so in that sense in which the symbol is part of the truth. Reality must also be allowed to individua, since the simple witness of experience, if not corroborated on the plane of the understanding, has its credentials in the recognition of value. Of this reality, however, the inner side seems to be unknown to us. The account of the reality of things as ultimately purpose is unacceptable, since experience of reality would thus be inseparably associated with practical experience. The truth in this view appears to be that there must be some value as the substance of any reality. The law of value in nature, corresponding to that of purpose in human life, may be described as manifestation. The metaphysical relation of purpose to that of other values is in this view the struggle from a lower to a higher grade of reality, or a form of the tendency of any existence to increase its value.—*The Athenæum.*

DURING the current month the Reverend J. Nevell Figgis, Litt.D., Honorary Fellow of St. Catharine's College, Cambridge, delivered three lectures at Columbia University on "Nietzsche," "George Bernard Shaw," and "Bergson."

THE Macmillan Company announce as forthcoming "The Social Basis of Religion" by Professor S. N. Patten. Professor Patten describes religion in terms of social function instead of in terms of theological ultimates.

GEORGE PLIMPTON ADAMS, assistant professor of philosophy at the University of California, has been appointed lecturer in philosophy at Harvard for the year 1911–12.

GEORGE CLARKE COX, Ph.D. (Harvard, 1910), has been appointed lecturer in philosophy at Dartmouth College for the year 1911–12.